



July 2009



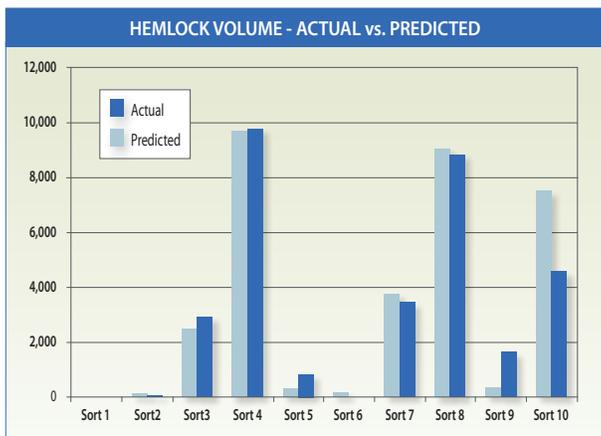
## BC Coastal Forest Sector Hem-Fir Initiative

This quarterly bulletin provides up-to-date information on projects related to the five-year BC Coastal (Hemlock and Amabilis Fir) Initiative. It covers the areas of product development and market economics, resource characterization, manufacturing techniques, and opportunities in the evolving bio-energy and bio-refinery sectors. The overall objective of this initiative is to increase the value of the Coastal hem-fir resource and the products manufactured from it.

Difficult conditions persist across the forest products manufacturing landscape. The BC Coastal Initiative team is committed to working with our industry and government counterparts to identify and implement short-, medium- and long-term opportunities. In this edition of the bulletin, we highlight one project seeking to improve the economic operability of stands and we also identify available reports generated through this initiative.

### A Model for Predicting the Value of Forest Stands in Various Market Conditions in British Columbia

The first step in Forestry Supply Chain Management (SCM) is understanding the quality of the standing resource. To address this issue a model for predicting the distribution of wood volume by species and sort for each proposed harvest site was developed at FPInnovations. The model uses standard cruise data collected in British Columbia (BC) and company sort descriptions to compute the distribution of volume by sort more rapidly and accurately than the methods currently in use, which rely mainly on historic data.



Tests on several sites on Vancouver Island have already yielded results that match well with the actual outcomes. The model can compute the value of standing timber for one or more sets of sort values and descriptions in order to quickly analyze the impact of changing market conditions. It can be extended to analyze the profitability of stands by subtracting the costs of harvesting and management (road construction, harvesting, silviculture, etc.) from the timber value.

This model will undergo industry testing this summer and has the goal of improving BC Coastal sawlog values by 10%.

For more information contact Mihai Pavel, senior researcher in FPInnovations Harvest Operations group at [mihai.pavel@fpinnovations.ca](mailto:mihai.pavel@fpinnovations.ca).

FPInnovations would like to thank its industry members, Natural Resources Canada - CFS and the Province of British Columbia MoF&R for their support in this joint federal-provincial-BC industry initiative. The program was developed as a result of the Province's "Competitiveness Report" and is a component of the "Coastal Forest Action Plan".



## BC Coastal Initiative Reports

A number of reports are now available from the BC Coastal Initiative. To obtain a digital copy of a report, please visit the website ([www.bccoastalinitiative.ca](http://www.bccoastalinitiative.ca)) to review the report summaries and contact the appropriate researcher. As per our funding guidelines, reports are available to Canadian companies and Canadian citizens only.

### Assessment of Economically Available Biomass



FPIInnovations calculated the amount of forest biomass generated by timber harvesting operations on Vancouver Island and south coast mainland from roadside, dispersed (cutover), and dryland sortyard residues. Field measurements in 28 cutblocks related the volume of roadside residues to the volume of harvested merchantable logs in a factor called the biomass ratio. Roadside residue volumes for the entire study area were calculated by applying the biomass ratio, stratified by leading species, stand age, bucking location and harvesting system, to the planned timber harvesting volumes for 110 supply areas. Comminution and transportation costs were calculated, and volume reductions were made to account for accessibility and transportation costs.

### Barriers and Opportunities in Lumber Conversion

This report identifies the current barriers restricting the success of sawmilling operations on the coast and presents opportunities for margin improvement, specifically focusing on the second-growth, hem-fir resource. The short-term opportunities indicated have minimal capital costs, rapid implementation potential and were found to be in the order of \$14/mbf. Medium-term opportunities will require moderate capital infusion and implementation time, but are anticipated to increase margins by approximately \$40/mbf.

### Present Utilization and Outlook of BC Hem-fir for Composite Products

Several plywood mills in BC use Hemlock and Amabilis fir to manufacture sheathing grade plywood and/or overlaid plywood. According to our industry survey, the overall recovery of Hem-fir is about 10% lower than that of coastal Douglas-fir. The drying productivity is also significantly lower for Hem-fir, about 70% of that of coastal Douglas-fir. Previous pilot plant studies at FPIInnovations – Forintek demonstrated that the second-growth Hem-fir is peelable and suitable for manufacturing LVL. Hemlock is comparable to Interior Douglas-fir for making structural LVL, however, no BC mills are currently selling or using Hemlock veneers in this application.

### Surface Defect Scanning

The objective of this project was to quantify the potential value gain that is achievable by adding surface defect detection to board scanning systems in edger and trimmer optimization at BC coastal sawmills.

Modifying the edging and trimming decisions from the profile optimized solutions would have resulted in a value gain for 77 of the 160 cants and sideboards sampled. Altering cutting decisions to account for surface defects would have increased lumber value by 34% for 80% of cants sampled.

For nine sample boards scanned using Bioscan™, 92% of knots appeared on scan images. These results demonstrate that a significant amount of identified value gain could potentially be realized using this existing technology.



Scanned and photographed sample boards from surface defect scanning.

For more information about this program, please contact spokesperson John Talbot at (250) 308-9955 or [john.talbot@fpinnovations.ca](mailto:john.talbot@fpinnovations.ca)

FPIInnovations brings together Feric, Forintek, Paprican and the Canadian Wood Fibre Centre of Natural Resources Canada, to create the world's largest private, not-for-profit forest research institute. With over 600 employees spread across Canada, FPIInnovations unites the individual strengths of each of these internationally recognized forest research and development institutes into a single greater force.

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